Read Ch. 10. → to Page 383.

Reconciliation

FOH Beg Inv.	0
FOH End Inv. (2,000 x 135)	270,000
Income Increase	270,000
Variable Costing Income	1,230,000
Absorption Costing Income	1,500,000

$BE = \frac{FC}{U.CM} = \frac{2,460,000}{615} = 4,000$ Units

Income Statement @ BE point (4,000 Units)

Sales	(4000 x 1000)	4,000,000
VC	(4000 x 385)	1,540,000
CM	4000 x 615	2,460,000
FC		2,460,000
Operating Income		0

Ex 9-21 Variable & Absorption Costing, Explaining Operating-Income Differences

Month of April.

Variable Costing ⇒ Non GAAP Income Statement ⇒ Used for Internal Purposes.

Sales	(350 x 24,000)	8,400,000
(VC)	(350 x 13,000)	4,550,000
CM	(350 x 11,000)	3,850,000
(FC)		2,600,000
OI,		1,250,000

$BE (Units) = \frac{FC}{UCM} = \frac{2,600,000}{11,000} = 236.$

Absorption Costing

DM

DL

VOH

$FOH = \frac{2,000,000}{500} = \$4000$ Per Unit

10,000 + 4000 = $14,000

Absorption Costing ⇒ GAAP Income Statement

Sales (350 x 24,000)		8,400,000
Less: COGS		
Beg. In	0	
COGM (500 x 14,000)	7,000,000	
COGAFS	7,000,000	
Less End In (150 x 14,000)	2,100,000	
COGS (350 x 14,000)		4,900,000
Gross Margin (350 x 10,000)		3,500,000
Less S & A Expenses		
V S&A Exp. (350 x 3,000)	1,050,000	
F S&A Exp	600,000	
Total S&A Exp		1,650,000
Operating Income		1,850,000

Reconciliation

FOH Beg. Inv	0
FOH End Inv (150 x 4000)	600,000
Income Increase	600,000 ⇐ because we did not expense End. Inv.
Variable Costing Income	1,250,000
Absorption Costing Income	1,850,000

Mid #2 Outlines ch. 6, 7, & 8

5 problems

1 - ch. 6. Sales & Production Budget ⇒ (Sales & Production Budget) and missing #s — over two months

2-3-4-5 ch 7 & 8 Direct M ~~Standard &~~

2 DM Standard & Variances

3 DL Standard & Variances.

Ch. 08 {
4 - VOH Standards & Variances and Over & Underallocated.
5 - FOH Standards & Variances and Over & Underallocated

8 Multiple Choice Questions.

Ch. 7, 8 (1, 2, 3, 4 why favorable & Unfavorable. (like paying more or less, Using more hours or less)
What do Variances Mean? 5 - Journal Entries.

ch 6, 7 — (6-7) (8) Computations 6 - DM standard Variance - 7 DL standard Variance & missing #s - 8 - PVV

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(U) unfavorable PVV will be added to COGS.
(F) favorable PVV will be subtracted from COGS.

Month of May

Variable Costing

Sales	(520 x 24,000)	12,480,000
(VC)	(520 x 13,000)	6,760,000
CM	520 x 11,000	5,720,000
(FC)		2,600,000
O.I.		$3,120,000

DM
DL } 10,000
VOH

VS&A 3000

FOH = $2,000,000 / 500 Units = $4000

Manufacturing Cost: 10000 + 4000 = $14,000

Cost behavior → Variable, Fixed, or Mixed.

Absorption Costing

Sales	(520 x 24,000)		12,480,000
Less COGS			
Beg. Inv.	(150 x 14,000)	2,100,000	
COGM	(400 x 14,000)	5,600,000	
COGAFS	(550 x 14,000)	7,700,000	
Less End In.	(30 x 14,000)	(420,000)	
PVV adj	(100 x 4000)	400,000	
Adj COGS			7,680,000
Gross Margin			4,800,000
Less S&A Expenses.			
V S&A Exp.	(520 x 3,000)	1,560,000	
F S&A Exp		600,000	
Total S&A Exp		2,160,000	2,160,000
Operating Income			$2,640,000

Budgeted	500 Units
Actual	400 Units
Diff	100 Unit (U)
	x $4000 FOH
PVVE	400,000 (U)

Reconciliation

FOH Beg. Inv. (End In of Last Month (April))	(150 x 4,000)	(600,000)
FOH End Inv.	30 x 4,000	120,000
Income Decrease		(480,000)
Variable Costing Income		3,120,000
Absorption Costing Income		$2,640,000

Chapter 10 – Determining How Cost Behave

High-Low Method

	Patient Days	Maint. Costs
Hi June	8,000	9,800
Low March	5,000	7,400
Diff (or Change)	3,000	$ 2,400

$$VC = \frac{\text{Change In Cost}}{\text{Change In Activity}} = \frac{2,400}{3,000} = \$0.80 \text{ per Day}$$

FC = Total Cost – Variable Cost

June FC = 9,800 – 0.80(8000) = $3,400

March FC = 7,400 – 0.80(5000) = $3,400

$$\underset{\text{Mixed}}{Y} = \underset{\text{Fixed}}{a} + \underset{\text{(Volume Per Activity) Variable}}{b\,X}$$

		FC		VC		
Hi June	=	3,400	+	[8000 (0.80)]	=	9,800
Lo March	=	3,400	+	[5000 (0.80)]	=	7,400
July	=	3,400	+	[6200 (0.80)]	=	8,360 Budgeted/Predicted
						7,800 Actual
						560 (F)

(45)

Read Ch. 15 → to page 615
Ch 16 → to page 653.

Ex10-27 Estimating a Cost Function, High-low Method.

	Trips	Cost Per Trip	Operating Cost $
High	2,000	300	600,000
Low	1,000	350	350,000
Diff	1,000		$250,000

$VC = \frac{\text{Change in Cost}}{\text{Change in Activity (Trip)}} = \frac{250,000}{1000} = \$250$ per Trip

FC = Total Cost − Variable Cost

High $: FC = 600,000 − 250(2000) = 100,000

Low: FC = 350,000 − 250(1000) = 100,000

Y = a + b x

Hi = 100,000 + 2000(250) = $600,000

Lo = 100,000 + 1000(250) = $350,000

On Average 1,200 Trips.

Y = 100,000 + 1,200(250) = 400,000

for 10 Helicopters

Budgeted = 400,000 x 10 = 4,000,000

EX10-23 Various Cost-behavior Paterns

1

2 _ B

3 _ G

4 _ J

5 _ I

6 _ L

7 _ F

8 _ K

9 _ E

(6)

Allocations
- Ch.15 - Service Cost
- Ch.16 - Joint Cost

Chapter 15

Service Cost Allocation ⇒ 3 methods
1) Direct Method
2) Step Down Method
3) Reciprocal Method

1) Direct Method	Service			Production		Total
	Rec. Patient	Personnel	Adm. & Acct	Orthop.	Int. Medecine	Total
OH Costs	100,000	60,000	190,000			350,000
Allocat. Rec Patient	(100,000)			30%/100% 30,000	70%/100% 70,000	
Allocat. Personnel		(60,000)		25%/75% 20,000	50%/75% 40,000	
Allocat. Adm & Acct			(190,000)	35%/95% 70,000	60%/95% 120,000	
Total Allocation				120,000	230,000	350,000

2) Step Down Meth.	Personnel	Adm. & Acct	Rec. Patient	Orthop.	Int. Medecine	Total
OH Costs	60,000	190,000 +	100,000 +			350,000
Alloc. Personn.	(60,000)	20/100 12,000	5/100 3,000	25/100 15,000	50/100 30,000	
Allocat. Adm & Acct		(202,000)		35/95 74,421	60/95 127,579	
Allocate Rec Patient			(103,000)	30/100 30,900	70/100 72,100	
Total Allocation				120,321	229,679	350,000

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EX 15-31 Support-Department Cost Allocations: Single-department Cost pools; direct, Step down, and Reciprocal Methods

Direct	A	B	X	Y	Total
OH Cost	420,000	180,000			600,000
Alloc. A	(420,000)		(10/16) 262,500	(6/16) 157,500	
Alloc. B		(180,000)	25/100 45,000	75/100 135,000	
Total Alloc.			307,500	292,500	600,000

Step Down Meth.	A	B	X	Y	Total
OH Costs	420,000	180,000			600,000
Alloc. A	(420,000)	(4/20) 84,000	(10/20) 210,000	(6/20) 126,000	
Alloc. B		(264,000)	(25/100) 66,000	(75/100) 198,000	
Total Alloc.			276,000	324,000	600,000

Allocating A first

Step Down Meth.	A	B	X	Y	Total
OH Costs	420,000	180,000			600,000
Alloc. B	(150/250) 108,000 528,000	(180,000)	(25/250) 18,000	(75/250) 54,000	
Alloc. A		0	(10/16) 330,000	(6/16) 198,000	
Total Alloc.			348,000	252,000	600,000

Allocating B first

(8)

Chapter (16)

Joint Cost Allocation

- Joint Cost
- Splitoff Point
- Separable Costs
- Byproducts

Spending	Production		end. Inv.
$900. to feed cows per month.	Milk: 1,000 qt →	Sales Value $.55 per qt: $550	20%
	Cream: 500 qt →	$.90 per qt: $450	20%

splitoff point	Milk	Cream	Total
A) Physical Measure	1000 qt	500 qt	1500 qt
1- quarts	2/3	1/3	
2- Weighting			
3- Joint Cost Allocation	600	300	900

B) Sales Value @ Splitoff	Milk	Cream	Total
1- Sales Value	$550	$450	$1000
2- Weighting	55%	45%	
3- Joint Cost Allocation	550/1000 $495	450/1000 405	$900

Physical Measure — Product Line Income Statement	Milk	Cream	Total
Sales (800 x .55) & (400 x .90)	440	360	800
COGM	600	300	900
Less End Inv. 20% (20% of COGM)	120 (600 x 20%)	60 (300 x 20%)	180
COGS	480	240	720
Gross Margin	(40)	120	80
Sales Value @ Splitoff point			
Sales	440	360	900
Less COGS			
COGM	495	405	900
Less End Inv. 20%	99	81	180
COGS	396	324	720
Gross Margin	44	36	80
Gross Margin %	10%	10%	

3

Spend more to make →

end In

$900 — $300 milk shakes 1,000 Qt Sales Value $1.80 per Qt — 20%

$900 — $200 ice cream 500 Qt $1.4 — 20%

c) Estimated NRV

	Milk Shake	Ice Cream	Total
1. Sales	1,800	700	2,500
2. Less Separable Cost	(300)	(200)	500
3. NRV Net Realizable Value @ Split off	1,500 (1,800-300)	500 (700-200)	2,000
4. Weighting	3/4 75%	1/4 25%	
5. Joint Cost Allocation	675	225	$900

900 × 75% = 6[illegible]
900 × 25% = 2[illegible]

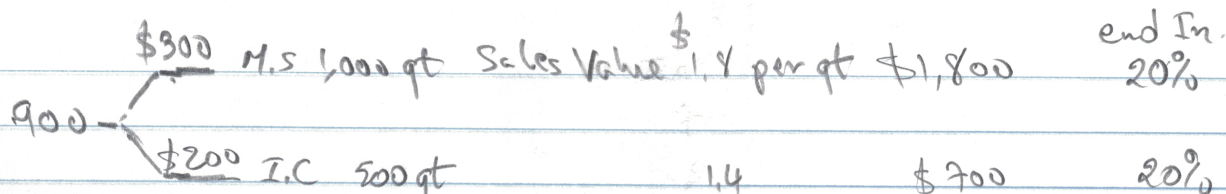
Product Line Income Statement

	Milk Shake	Ice Cream	Total
Sales (800×1.80) & (400×1.4)	1,440	560	2,000
Less COGS.			
Joint Cost	675	225	900
Separable Cost	(300)	(200)	500
COGM	975	425	1400
Less End In 20%	(195) 975×20%	85 425×20%	280
COGS	780	340	1,120
Gross Margin	660	220	880
Gross Margin %	45.8%	39.3%	44%

Ch.16 Joint Cost Allocation
- a Physical Measure
- b Sales Value @ splitoff
- c Estimated NRV
- d Constant Gross Margin %

(50)

4

						end In.
900	$300	M.S 1,000 qt	Sales Value $ 1.8 per qt	$1,800		20%
	$200	I.C 500 qt	1.4	$700		20%

Constant Gross Margin %

1)

	M.S	IC	Total
a) Sales Value	1,800	700	2,500
b) Less Joint Cost			900
c) Less Seperable cost	300	200	500
d) Gross Margin @ Sales Value			1,100
e) Gross Margin %			44%

2)

a) Sales Value	1,800	700	2,500
b) GM % (44%)	792	308	1,100
c) Cost of Good Sold	1,008	392	1,400
3) a) Less Sepa. Cost	300	200	500
Joint Cost Allocation	708	192	900

	M.S	IC	Total
Sales (MS 800 x 1.8) & (I.C. 400 x 1.4)	1,440	560	2,000
Less COGS			
Sep. Cost	300	200	500
Joint Cost	708	192	900
COGAFS	1,008	392	1,400
Less End In (20%)	202	78	280
COGS	806	314	1,120
Gross Margin	634	246	880
Gross Margin %	44%	44%	44%

EX 16-24 Alternative Joint-cost-allocation Methods, Further-process Decision

Joint cost → $124,000, 95,000 Gal
- Methanol 25% — 2,375 Gal. x $4 ⇒ Sepr Cost $9,500 → Sales Value x $22 ⇒ $52,250
- Turpentine 75% — 7,125 Gal x $2 ⇒ Sepr Cost $14,250 → Sales Value x 16 ⇒ $114,000

a) Physical Measure Method.

	Methanol	Turpentine	Total
Physical Measure Gallons	2,375	7,125	95,000
Weighting	1/4 or 25%	3/4 or 75%	1
Joint Costs Allocation	31,000	93,000	124,000

b) Estimated NRV Method	Methanol	Turpentine	Total
Sales Value	52,250	114,000	166,250
Less Sep. Costs	9,500	14,250	23,750
NRV @ split off	42,750	99,750	142,500
Weighting	30%	70%	100%
Joint Costs Allocation	37,200	86,800	124,000

Product Line Income Statement for Method "a" (Physical Measure M.

	Methanol	Turpentine	Total
Sales	52,250	114,000	166,250
Less COGS:			
Sep. Cost	9,500	14,250	23,750
Joint Cost	31,000	93,000	124,000
COGS	40,500	107,250	147,750
Gross Margin	11,750	6,750	18,500
Gross Margin %	22.5%	6%	11.1%

Product Line Income Statement Using Est. NRV Method.

	Methanol	Turpentine	Total
Sales	52,250	114,000	166,250
Less COGS			
Sep. Cost	9,500	14,250	23,750
Joint Cost	37,200	86,800	124,000
COGS	46,700	101,050	147,750
Gross Margin	5,550	12,950	18,500
Gross Margin %	10.6%	11.4%	11.1%

Chap. 17 - Process Costing

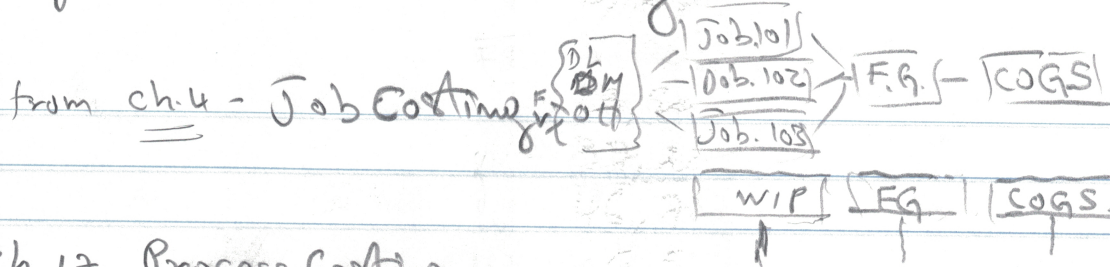
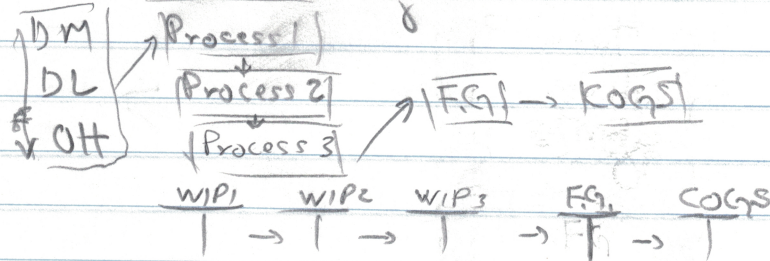
from ch. 4 - Job Costing

DL, DM, OH → Job 101, Job 102, Job 103 → F.G. → COGS

WIP | FG | COGS

Ch. 17 - Process Costing

DM, DL, OH → Process 1 → Process 2 → Process 3 → FG → COGS

WIP1 → WIP2 → WIP3 → FG → COGS

Barbie Doll

Dept A (Forming) DM @ beg. of process.
Conversion Cost: DL throughout process. OH throughout process
Transfer to

Dept B (Finishing) DL throughout process.
OH throughout process
DM @ End of process.
Transfer to

Finished Goods.

Beg Inv. + Units Started = Units Transferred + End. Inv.

Data: Units

WIP Beg. 100 DM 100%
conv. 40%

Started 400

Complet. & Transf. 480

WIP End 20 DM 100%
CONV 50%

Data: Costs $

WIP Beg DM $4,000
conv 1,110

Current DM $22,000
conv $18,000

會計

Weighted Average (Process!) 1) Physical Units 2) Equivalent Units.

	Physical Units		DM		Conv.
WIP Beg.	100				
Started	400				
	500				
Complete & Transf	480	100%	480		480
WIP End	20	100%	20	50%	10
	500		500		490

equivalent whole Unit

Costs $	Total	DM	CONV	EWU
3) WIP Beg.	5,110	4,000	1,110	
Current	40,000	22,000	18,000	
Total Cost	45,110	26,000	19,110	
4) ÷ Equiv. Units		÷ 500	÷ 490	
= Cost per Equiv. Unit		52 +	39 =	91

5) Assignment of Cost

Complet. & Transf	43,680		480 x 91
WIP End DM $1,040		20 x 52	
Conv. $390			10 x 39
Total	1,430		
Total Costs	45,110		

Journal Entries for Process Costing

	Dr	Cr
WIP A	22,000	
Materials Control		22,000
WIP A	18,000	
Wages Payable		6,000
OH allocated		12,000

Assume OH allocated @ 200% of DL$

Let $x = DL\$ \Rightarrow 2x = OH\$ \Leftrightarrow x + 2x = 18{,}000 \Rightarrow x = \frac{18{,}000}{3} = 6{,}000$

$\Rightarrow DL\$ = \$6{,}000$ & $OH\$ = \$12{,}000$

55

WIP B	43,680	
WIP A		43,680

WIP A

5,110	Transf.
22,000	43,680
18,000	
45,110	43,680
1,430	

FIFO Process!

Flow of Production.	1) Physical Units	2) Equivalent Units DM	Conv.
		(100%) Complet.	(40%) Complet.
WIP Beg.	100		
Started	400		
	500		
Complet. & Transf.	480 100%	480	480
WIP End.	20	(100%) 20	(50%) 10
Work Done to Date	500	500	490
Less: Work Done on Beg. Inv.		100	40
Work Done this period only.		400	450

Costs $	Total	DM	Conv.	EWU
3) WIP Beg.	5,110	—	—	
Current	40,000	22,000	18,000	
Total.	45,110			
4) ÷ Equiv. Units		÷ 400	÷ 450	
Costs Per Equiv. Units		55 +	40 =	95

5) Assignment of Costs

WIP End.	D.M.	1,100	20x55
	Conv.	400	10x40
	Total	1,500	
Complet. & Transf. (Plug)		43,610	
Total		45,110	

6) Reconciliation.

WIP Beg.	5,110
Additional Costs to Complet.	
Conv. 60% x 100 x 40	2,400
Started & Completed	
400 - 20 = 380 => 380 x 95	36,600
Complet. & Transf.	43,610

Journal Entries

WIP B	43,610	
WIP A		43,610